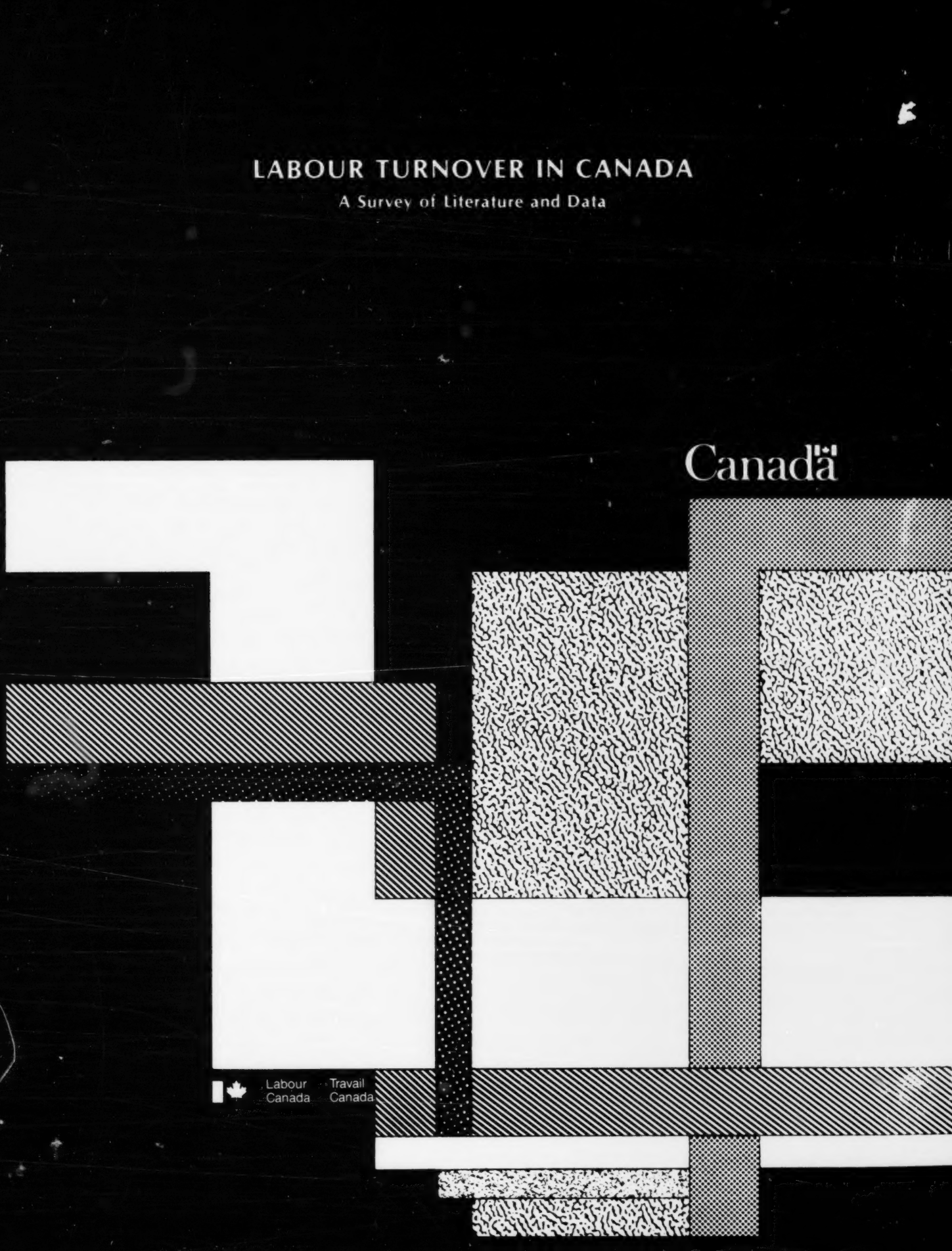
LABOUR TURNOVER IN CANADA

A Survey of Literature and Data



LABOUR TURNOVER IN CANADA

A Survey of Literature and Data

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FOREWORD

Labour turnover can be viewed from a number of perspectives, and is sometimes held to be one indicator of labour-management conflict. As part of a series of longer-term studies to assist in the review of industrial relations policy, Professor Kaliski was asked to prepare a paper on the subject of labour turnover in the Canadian labour market and industrial relations context.

The paper begins with a general review of the literature on the subject, and surveys what is known about labour turnover in Canada, including a discussion of the problems of measurement and an account of a number of both American and Canadian studies. The paper concludes with suggestions for the directions which further work could take.

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August 1981

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INTRODUCTION

There is a large and varied literature on the nature, significance, measurement, and implications of labour turnover. (Or, perhaps more accurately, there are several, rather independent, bodies of turnover literature.) Surprisingly, turnover data are not regularly or systematically collected in Canada and, perhaps in consequence, there are no comprehensive empirical studies that are national in scope. Such applied work as there is, is restricted to specific periods, areas, industries, or companies. By far the largest portion of it consists of "managerial" case studies of particular firms, plants, or industries, aimed at revealing and reducing the costs of excessive turnover. Surprisingly also, although many firms seem to be concerned about their turnover, few record it systematically or estimate its costs.

In the United States, the Bureau of Labor Statistics collects and publishes monthly data on labour turnover in manufacturing but these are limited in coverage and have other conceptual, classification and measurement problems.

There are in both Canada and the United States related bodies of data that can be and have been made to yield information about turnover. The several sets of Canadian Labour Force Survey micro data are perhaps the most promising from this point of view, but they have only recently become available, are fairly expensive to manipulate, and have not yet been exploited for this purpose.

In what follows, no attempt is made to provide an exhaustive description or cataloguing of either the Canadian or the world literature on turnover. Instead, some general points of view on turnover are described and the economic literature is discussed in more detail. There follows a discussion of measurement and data and an account of a number of selected American and Canadian studies. The paper concludes with some brief suggestions for further work.

The list of references is confined to papers actually cited in the body and a brief list of bibliographic sources, which are plentiful. The reader is referred to the annual inventory of *Industrial Relations Research in Canada*, published by the Employment Relations and Conditions of Work Branch, Canada Department of Labour for information on current and future work.

The Literatures of Turnover -- points of view

James Price, a prolific contributor to the literature, who attempts a number of "codifications" (e.g. 1976, 1977) or systematizations of the turnover literature(s) defines his subject matter as individual movement across an institutional membership boundary[1] and recognizes contributions from the disciplines of psychology, social psychology, economics, sociology, and political science, and the applied areas of business, education, health, public administration and organizational study. Without resolving all the definitional problems[2] or pretending to any nice distinction between disciplines and applied areas or any precise delineation of each of them, one might start with Price's definition and classification.

To the outsider, at least,[3] the psychological and sociological analyses blend into one another as do the organizational and managerial studies. This should occasion no surprise: whatever the analyst's disciplinary background, after all, he is looking at the same phenomenon -- human behaviour in relation to a work place. The particular aspect of that behaviour that is focussed upon in turnover studies, is the selection among a number of potentially available places to work or workers: The initial

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[1] He also points out that "[i]t is a very complex task to determine the membership boundary of an organization". (1976, 35) We shall discuss some aspects of this difficulty below.

[2] It will be seen that the economic literature, in particular, slips somewhat uneasily between notions of severing ties with an employer and of alterations of labour force states. See e.g. Hall (1972). Measurement, too, suffers from this ambiguity. These matters are discussed further below.

[3] And perhaps not only to the outsider. A recent avowedly multidisciplinary study (Leckie *et al.*, 1980) that uses a similar classification hints at the same lack of a clear division.

choice of an employer for the new entrant or reentrant into the labour force or the unemployed person and the decision to leave a work place, usually to enter or seek another for an employee. For an employer the choice is among actual or potential workers. For both parties the process is essentially one of trial and error in the face of uncertainty, imperfect information, and changing circumstances. The relevant characteristics of each party are important to the other's decision.

There may be some disagreement as to what are the crucial characteristics, the process of discovery, or the predicted outcome, but there are bound to be many elements in common. The psychologist or sociologist may characterise what is happening in terms of information networks, induction crises, acculturation, integration, satisfaction, correspondence between aspirations and requirements, alienation, withdrawal, personality types and environmental stimuli; the economist, in terms of search as an investment in information, non-pecuniary costs and benefits, maximization of net advantages in the face of constraints, productivity, tastes, and the degree of tightness in the labour market. The similarities in what is being discussed are plain to see beneath the differences in language.

Moreover, when it comes to measurement, verification, and quantification, both the dependent and the explanatory variables (call them correlates, intervening variables, or indicators, as you will) will be very similar: personal characteristics of the worker such as age, sex, family circumstances, education or skill level, origin, language or ethnicity, and length of service; characteristics of the employer such as rates of pay,

fringe benefits, unionization, nature and stability of work, promotion policies, location and size; and market variables such as wages for comparable work and changes in them and indicators of slack or labour shortage. When the lists differ this is more likely the result of availability of data or degrees of freedom than of the researcher's theoretical or disciplinary predilections.

Where there may be more difference between disciplines is in the basic question that is being put -- the ultimate objective of the analysis. For the sociologist and the psychologist this seems to be the explanation of individual behaviour often in interaction with others or integration into both a formal organization and formal and informal groups within it.[1]

The economic literature is also interested in explaining behaviour but it is principally the behaviour of aggregates such as firms or markets. Individual maximizing behaviour is an important input into the prediction of the behaviour of such aggregates. The predominant emphasis of both the search and the specific human capital branches of normative turnover literature has been, as is often the case in normative economics generally, on establishing circumstances in which maximizing private behaviour will lead to suboptimal social results and enquiring whether such (e.g. institutional) circumstances do or are likely to exist.

Finally, the managerial or organization literature starts with a perceived private problem of excessive costs of voluntary turnover or

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[1] Indeed, it may be that it is the relative stress on individuals and groups that divides this literature in two.

"breakdown" in all or some part of an organization. The procedure is then to diagnose the particular causes of the problem and suggest remedies.[1]

Having distinguished broadly between several branches of the literature, we now give a somewhat fuller account of each of them:

The sociological and psychological literature:

Much of the original literature here takes the form of case studies of particular plants or firms with a more or less explicit analytical framework but Price (1975 and 1977) Pettman (1975) Hill (1975)[2] and others have made a number of analytical syntheses of these. This work represents "[t]urnover as a social process". It stresses the continuity in the worker's interaction with the organization and its influence on his perception of himself and his environment. "Every employee is, potentially, both a continuing entrant and a possible leaver...[he]...begins to leave when he enters, and continues to enter until he leaves...the process is continuous...for individuals...and...for groups." (Rice, *et al.* 1950, 355-6) It is an error to concentrate unduly on the terminal points of accession and separation. It is an error, too, to distinguish sharply between an individual's psychological reaction and the external circumstances to which he reacts. The worker's appreciation of his role in the firm alters both his perception of his present situation and his awareness and evaluation of alternative possibilities

[1] Again, it may be the nature of these remedies that differentiates the two literatures.

[2] Much of the British work was done by researchers at the Tavistock Institute. (e.g. Hill, 1975, Rice, *et al.*, 1950, etc.)

open to him. (Gowler and Legge, 1975) Even the decision to quit itself -- to separate or withdraw permanently is part of continuum of withdrawal decisions. Partial or temporary withdrawal: accident proneness, slacking off, (Freeman, 1976) absence of various sorts,[1] are steps along the way. (Hill, 1975; Gowler and Legge, 1975) One might speculate that militant union activity,[2] general troublemaking, or even industrial sabotage are, in some sense, points beyond quitting (though there is clearly another dimension of involvement to them) as is provoking suspension or dismissal, or insubordination, or a strike, followed by grievance, discharge or legal action.

Despite this continuity of the process, there is a quite general recognition of an "induction crisis" -- a period during which the new entrant and the employer explore one another. Many of the entrants that leave, leave quite soon.[3]

To sketch in the process a bit more, the new worker is likely to

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[1] See Chadwick-Jones, (1980,9) and references for another view on this matter.

[2] Leckie, *et al.* (1980, 17) and references characterise more general union activity as an alternative to withdraw along "exit-voice" lines. Perhaps all three suggestions above belong more properly in "voice" in this framework, although Freeman (1976, 362) views both slacking and "quiet sabotage" as forms of withdrawal.

[3] In the initial Rice, *et al.* study (1950, 357) 27 p.c. left within 6 months and 40 p.c. within a year. Cawsey and Richardson (1975, 4.4) also report the first six months to be important. Although Rice, *et al.* warn against bifurcating the work force into a "hard core" and "marginal" on this basis, many subsequent researchers do follow this practice and terminology. Like many generalizations about turnover, however, this one exhibits a high variance. (See e.g. Portis (1976).) Price (1977) views the negative correlation between separation rates and length of service as a strongly supported result but warns that length of service may be an indicator of age. (Economic reasoning suggests that, quite aside from psychological factors, for given pecuniary transition costs and expected annual gains from changing employers older workers would be likely to gain less by the change.)

experience some discomfort on entering a new work place. In part this is so because working for someone involves a relationship of dependency and so generates intense feelings. The transition may be eased by involving foremen and other supervisory personnel in the hiring process, to give them and new workers mutual feelings of responsibility for and to each other and more information on the requirements of the job and expectations of the worker, arranging orientation sessions with members of the personnel department, integration into the community or work team, etc. (Hill, 1975; Gower and Legge, 1975; Price, 1975; Cawsey and Richardson, 1975; Wedley and Fulton, 1975.) The existence at the work place of primary groups -- groups with which the worker can identify and from which he gets a sense of participation and belonging, and of informal communications also ease the transition.

The worker may also ease his discomfort by unsanctioned absence or quitting or the foreman may fire him at this stage. As he becomes accustomed to the norms of the work place his absences will take a more acceptable form, e.g. sickness, leave, accidents. (Hill, 1975) The worker gradually accepts his occupational role or changes it by internal transfer or promotion or by quitting. Congruence between a worker's aspirations and the job role or requirements are a source of satisfaction, integrate the worker into the organization and produce reluctance to leave it, and resistance to change within it. With time and age there is a tendency to integration through the impact of experience on aspirations. The degree of fit between the occupational role and roles in the community and the family also matters. The degree of psychological integration as well as

such other aspects of his condition as total compensation, working conditions, and opportunities elsewhere enter into and alter the worker's calculus of net advantage that determines his decision to stay or leave. (Gowler and Legge, 1975; Price, 1975)

As is obvious from the above account, various aspects of the employing organization: its location and the surrounding community, its size and degree of formality, the absence or presence of primary groups, the nature of the work and of working arrangements, the existence or absence of an internal labour market with its opportunities for transfer and promotion, all matter a good deal. Finally, the nature of the work place and the level of turnover intereact in vicious or virtuous circles. High turnover imposes heavy burdens on foremen and personnel managers and leaves them with little time, energy, or inclination to ease the induction process. It breaks up primary groups and work teams, and leads to loss of satisfaction and morale in the remaining work force, who, in turn, may leave or be fired. Similary, lower turnover may lead to a climate favourable to yet lower turnover. (Price, 1975, 1976; Hill, 1975; Cawsey and Richardson, 1975; Wedley and Foulton, 1975) We are now, surely very near the boundary of the sociological-psychological and the organization-managerial literature and have likely crossed it.

The managerial-organizational studies:

The managerial-organization literature is almost certainly the most abundant of the three considered here. One suspects, moreover, that the studies publicly available are only a small sampling of those that must have been done for individual firms, either by their own personnel staffs or by consultants. Oddly, although many Canadian firms seem to have been sufficiently concerned about turnover to express such concern, cooperate with and finance researchers, or even call in consultants, few seem to keep systematic records on turnover. (Portis, 1976; Robertson and Humphreys, 1978)[1]

An attempt to discuss the general results can be found in Peskin (1973). What follows tries to give the flavour of a few Canadian studies. This literature consists overwhelmingly of case studies of particular firms, although some of these are treated comparatively for an industry as a whole.[2]

The aim of a typical study in this tradition appears to be to measure the magnitude of turnover, enumerate or calculate its cost to the firm affected, and suggest remedies for reducing the turnover and so the costs.

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[1] Even in the much studied mining industry, Cawsey and Richardson "found that wide variations existed...as to the nature and frequency of management reports on turnover." (1975, 4.2) In their interviews with mining executives, some reported that they keep no turnover records as such, others doubted the value of such records.

[2] Most notably for Canada the series of studies of the mining industry with major contributions by Cawsey and Richardson (1975) and MacMillan *et al.* (1974 and 1975) and of the shoe industry by Portis (1976).

The remedies often take the form of building in diagnostic techniques to monitor turnover and trace its proximate causes, improving hiring, screening, and induction procedures, communications, the atmosphere of the work place, etc. In the particular case of remote mines (and, one assumes, other operations of a similar character such as lumber camps or construction sites) the employer is often also responsible for supplying housing, food, entertainment, and other community services. The suggestions for improvement often extend to these facilities.

Aside from this special emphasis on mining communities, much of the discussion overlaps heavily with that already presented: job satisfaction based upon wages, working conditions and one's perception of one's social standing, competing opportunities (including general cyclical phenomena (MacMillan *et al.*, 1977; Portis, 1976; Cawsey and Richardson, 1975) are important to the decision to stay or to quit. The costs of turnover, although admittedly difficult to quantify, are believed to be high but MacMillan, *et al.* (1977) concede that even for the much studied mining industry they still lacked the data to quantify them and to develop remedies based upon a cost-benefit calculation.[1] These costs consist of the usual hiring costs, augmented by the need to use employment agencies and provide transportation in the case of mining sites; the costs of training, including initially low productivity, distraction of others, under-utilization and misuse of equipment, etc.; and the loss of output and disruption of working teams until replacements can be made.

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[1] Since cost reduction is the aim of the exercise, it is clearly important to avoid solutions to excess turnover that cost more than the problem. (Cawsey and Richardson, 1975; Portis, 1976)

The possibilities of virtuous and vicious circles are again recognized with dissatisfaction with working conditions and living conditions in the community leading to further deterioration in these conditions and more turnover.

It is an important contribution of these studies that they stress the need for an integrated strategy to combat turnover: The diagnostics, hiring procedures, orientation and settling into the community, work and community arrangements, etc., must all be carefully coordinated to produce an overall optimizing result.

In more detail, it is stressed that diagnostic tools should be precise enough to pinpoint problems and suggest remedies. Comparison of the turnover experience of departments, foremen and managers, locations, plants and companies all might be helpful.

Considerable stress is laid on ascertaining the personal profiles -- age, sex, family and educational and skill characteristics of leavers and of stayers and on designing a screening procedure to eliminate potential early quitters.[1] The use of exit questionnaires or interviews and of preventive procedures for an easy communication to management of sources of worker dissatisfaction, e.g. by an informal involvement of personnel employees in orientation and recreational and community activities is recommended. Once

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[1] There is much emphasis on screening, especially the screening out of young unmarried males who are generally reported to be the most unstable element, in the mining literature. (There is also a much more general literature on the employment-instability of this age-sex group, e.g. Feldstein, 1973.)

it is discovered what sorts of recruits are likely to remain, hiring procedures should be designed to select such groups of people and eliminate others. "Never hire a 'warm body' because you must fill a vacancy." (Cawsey and Richardson, 1975, 4.7) The organization of the work and, where that is relevant, of living conditions and the community, should then be such as to maximise the chances of retaining such people.

The nature of this advice varies: Thus Portis (1976) finds that because of alternative opportunities shoe firms are likely to lose workers, especially skilled ones, most rapidly in or near metropolitan areas. Presumably, if any advice were to be based upon this it would have to be advice to new firms on location or to old ones on relocation. Portis also notes that the provision of flexible hours attracts some married women.

For mines, Cawsey and Richardson (1975) lay considerable stress on recruiting employees who are likely to stay, married persons preferably with young children, and organizing the work, housing, and the community so as to attract various groups of employees.[1] But they also report on earlier work that suggests that, at least in some circumstances, so long as minimum standards for food and shelter are attained, turnover may be insensitive to isolation and to facilities provided. Very likely what is at work is some process of self selection. On the surface it is surprising how much the literature being reviewed emphasises screening and adaptation of facilities to the work force and how little explicit attention it pays

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[1] They also warn of possible complementarities and incompatibilities among groups.

to inducements to self selection. In the economic literature, self selection devices are often thought to be more reliable and cost-efficient than screening devices. In the particular context of turnover, Salop and Salop (1976) suggest that a system of "entrance fees" and wages rising with tenure be used by firms with particularly high unit turnover costs to attract stable employees and discourage others.[1] But one can easily exaggerate this contrast: while Cawsy and Richardson emphasize screening and do not discuss self selection as such they do advise hiring on the mining site rather than in a remote centre to get employees who have "realistic expectations" and thus reduce the "risk of getting a warm body". They also advise recruiters to "involve the wife in the decision", "be realistic in...descriptions of the company and environment", "hire employees able to adapt...enjoy activites which are possible in the community...are interested in training." Taken together with the advice to "avoid paying relocation costs" (1975, 4.16-4.17)and for creating possibilities for internal promotion this sounds very like a prescription for inducing self selection by entry fees and increasing wages.

Presumably both the advice to screen and to encourage self selection is subject to the constraint of overall maximization: If it is too costly to recruit the most stable groups and organize the community so as to retain them, one might choose to recruit somewhat less durable workers and organize (or locate in) a community that is most likely to retain them for

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[1] We shall argue subsequently that this is the general character of the devices suggested in the firm-specific human capital literature.

a reasonable period. Moreover, it cannot pay all firms in competition with each other to hire only the most stable workers (Salop and Salop, 1976). In equilibrium the hiring and retention costs of such workers will necessarily rise enough to allow others, too, to be employed. Moreover, an existing firm necessarily has a work force and a location and must consider the cost of altering these. Again, these matters are not discussed directly. But Cawsey and Richardson do list strategies for both long and short run retention of groups of workers with very different degrees of stability.

We have now drawn some points of comparison between the managerial and economic literature. The latter is more fully explored in the following section.

The economic literature:

The analytical economic literature of turnover falls into two main categories of labour market analysis, each of which is part of larger economic literature with a history, tradition, and importance well beyond labour market phenomena: search theory and investment in human capital.

Search theory:

The roots of search theory may well be in George Stigler's famous 1961 and 1962 papers but its recent popularity almost certainly stems from Phelps' 1970 volume or from other versions of papers published there or similar papers published about that time by the same and other authors.[1] The theory is quite generally applicable to any market in which information is imperfect but its application to the labour market is among the most successful, largely, no doubt, because it became an important part of the "new classical" macroeconomics.[2]

In a pure search theory model, workers are able to obtain jobs at any time by applying to firms seeking persons with their qualifications. They have an exact knowledge of their own wages and working conditions, but only a general idea of the wages and conditions offered by other firms and/or of which of them are currently hiring. If workers become dissatisfied

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[1] See Parsons (1977) for a bibliography and some details of these.

[2] For a brief popular account of search theory in this context see Kaliski (1981).

with their present situation they quit their jobs and seek others. The optimal way to do so is to quit and to engage in full time search for a preferred job until further search costs more than it is expected to yield in terms of a more satisfactory job.[1]

Thus, although the labour market is in equilibrium in the sense that there is a job for every willing worker and a worker for every vacancy it takes time and effort to find a match between the two. Turnover is a costly process of information seeking and there are both unemployed seekers and unfilled vacancies at any moment.

Some turnover is clearly optimal, especially if there are dynamic elements in the market such as growth, entry of persons or firms into and withdrawal from the labour market or even the "social process" of employee-employer adjustment such as that described above. Turnover may be excessive if private search costs are subsidized by unemployment insurance, welfare, or training and mobility grants or too small if penalized by excessive cost or unavailability of credit secured only by expectations of employment or of obtaining staff, or if unemployment or understaffing are stigmatized. Mistaken expectations with respect to available jobs or employees may also lead to more or less than the optimal amount of turnover. Strong aversion to risk that necessarily attaches to expectations, whether or not they are correct, may well lead to below optimal rates of turnover. (Stiglitz, 1975) Finally, the process of search itself might have positive externalities, say

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[1] This, of course, is a very sketchy and general statement of the model. For a more detailed exposition see Parsons (1977) or Hall (1972).

through information sharing or negative ones, say through congestion phenomena.[1,2]

The above gives some of the flavour of both positive and normative search models of turnover with virtually none of the details. Such details are less important for our purposes than the main thrust of the analysis when one recalls that labour market reality is necessarily more complex than even the most detailed model so that any number of such models may be relevant. In particular: 1) Labour markets are typically not in equilibrium and other sorts of unemployment and vacancies coincide with those occasioned by search. It is, moreover, no trivial task to know what sort of vacancy or unemployment one is coping with. 2) Workers can and do search while employed or out of the labour force -- say, still at school. 3) Labour markets overlap, geographically, occupationally, and in other dimensions. The decisions involved may be about complex mixes of rates of pay, qualification, training, likely lengths of retention, etc. 4) As discussed earlier, one does not discover all about a job or a worker by searching. There remains a great deal of residual uncertainty gradually reduced by a continuing process of exploration and adaptation. 5) The costs and benefits of search have many incommensurable dimensions, each with a different changing margin. Wages forgone, out of pocket expenses, the value of leisure forgone, the psychic costs of search and of unemployment, and the real and/or perceived decline

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[1] I.e. the fact that individual firms or workers are likely to ignore the influence of their entering search on reducing the existing searchers' chances of success per unit time.

[2] For a much fuller discussion see Phelps (1972)

in working skills are all part of the workers' costs. The firm with unfilled vacancies suffers all the costs of turnover already discussed. The benefits involve comparing complex and uncertain occupational roles.

Firm specific capital:

This line of analysis is principally associated with Becker (1964) and his students and co-workers although its relevance to turnover costs was probably most forcefully brought out by Oi (1962). Quite generally, the analysis asserts that certain skills are only valuable, i.e. productivity enhancing, in the context of a particular firm. Knowing one's way around a particular institution, in any of the several meanings of that phrase, having detailed knowledge of a stock of parts, or a library, or a set of computer software or accounts, and of the system by which they operate, attaining special skill and dexterity in the operation or maintenance of a particular set of equipment are all examples.[1] Such skills are typically acquired on the job, often on the basis of some previous, more general training, but that is not their crucial characteristic. Their essence is that they can be utilized only so long as the worker remains a member of the particular organization. A severance of the relationship leads to a loss of the human capital investment.

For that reason, neither the worker nor the firm can afford to

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[1] It need not be argued that such skills are fully specific, i.e. non-transferable to other situations. It suffices that they have a significant element of specificity, i.e. that the employee's productivity in another setting would be lower until he acquired another array of specialized skills or knowledge.

make the entire investment. If the worker undertook the full investment, i.e. accepted during the training period a wage sufficiently low to pay only for his marginal product (net contribution to the firm's output)[1] he would then be at the firm's mercy, and a profit-maximizing firm would never have any incentive to pay him more than he could get elsewhere -- his opportunity wage which, in turn, in a competitive situation would equal to his marginal product exclusive of the return to specific human capital. From the worker's point of view his investment would have been wasted. Similarly, if the firm pays the worker his opportunity wage from the beginning it risks his being enticed away by any perceived net advantage and its investment being wasted.[2] In both these situations one party has no incentive to avoid the loss of the human capital investment since all the proceeds from it accrue to the other.

That particular problem is easily solved: the two parties share the investment, i.e. each contributes to the human capital formation and shares in the proceeds. Each bears a portion of the risk that the proceeds will turn out to be smaller than they anticipated because they have wrongly forecast the future. During training the worker receives less than his opportunity wage but more than his marginal product. Once trained, he receives more than his opportunity wage but less than his marginal product.

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[1] This wage might be negative -- in effect a tuition fee, since not only might all of a new worker's time be taken up with his own training, but he might also spoil materials, waste evergy, damage equipment, and distract others from their normal tasks.

[2] It should be clear now that the problem of excessive turnover cost is analytically a sort of specific human capital problem.

Each party now gains from a continued association and the two might enter an explicit or implicit contract -- an understanding -- to remain together for a long period of time.

If the firm is forced to reduce its output it may retain its specifically-skilled work force on full or part pay. Alternatively, it may retain some of them on its permanent work force, but lay them off temporarily[1] with an understanding that they will be recalled, perhaps in some specified order, when demand for their output revives.[2] Since the workers know their rights to recall and expect higher wages than they could get elsewhere, on recall many of them are likely to be available, whether or not they seek temporary work in the meanwhile. This is especially so if the demand slack is general in their labour market, so that alternative opportunities are unattractive.

Although the specific problem of one party having nothing to lose by a separation is solved by investment sharing, a more general problem remains: However the parties may agree to share their joint investment, so long as they do so ahead of time, neither will have the incentive to minimize the total loss to both from a separation. Thus, a worker will accept an offer if it seems to him superior to his marginal product with the present employer less that employer's share, and the employer will let the worker go

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[1] The details may depend on the nature of the contract. E.g. workers might ensure continuous employment with their employer -- a guaranteed annual wage -- by accepting a sufficiently lower permanent wage.

[2] The alternative of layoff with or without some pay is especially attractive if there is an incompletely experience rated system of unemployment insurance. (Feldstein, 1976)

if by so doing he can gain more than the employer's share of the return on the net investment. To avoid this problem the party deciding upon a separation must be obligated to compensate the other. Some contracts providing for severance pay or loss of travel allowance, e.g., do indeed exist, but they are troublesome, if only because they tempt each party into provoking the other into initiating a separation if the first party desires one. A suggested alternative is the use of seniority rules, interpreted as seniority ranks within the firm, for promotion (or choice of routes, shifts, tasks, etc.), layoff and recall and possibly other perquisites of employment.[1] Other incentive or "entrapment" (Donaldson and Eaton, 1976) devices such as non-vested pensions and wages, and fringe benefit entitlements (vacations, sick leave, etc.) that rise with tenure have also been suggested.[2] The problem with all of these is that they tempt the employer to get rid of expensive workers, i.e. workers who are collecting or are about to collect the postponed return on their investment. Carmichael's (1980) scheme does not present this temptation: the beneficiaries of a leaver are not the employer but the junior workers collectively.

We are now in a position to confront a final issue in the economic literature -- the occasional ambiguity between gross movements among labour

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[1] For the original and much fuller exposition see Carmichael (1980).

[2] See Stiglitz (1975) for a discussion of some of these. Recall also that this coincides exactly with the signalling suggestion of Salop and Salop (1976).

force states and turnover.[1,2] This ambiguity likely arises because in a pure static (closed) search theory model there is no difference between gross movements and turnover. Workers quit only to find other jobs and find other jobs only by quitting. The gross flow into unemployment (all of it from employment) is the same as quits which are all of separations. The gross flow into employment (all of it from unemployment) is the same as new hires which is all of accessions. If, further, the average period of search is constant, then over any period separations are equal to accessions and each is an unambiguous measure of both turnover and gross flows between labour market states.

In a more complex model there are additional flows between each

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[1] Only the concepts are discussed here. There are quite important questions of measurement that are left to the next section of the paper.

[2] Hall (1972) in an interesting analytical and empirical paper seems to confuse the two: Hall's paper opens with a discussion of a decomposition of unemployment into its two components of duration and gross flows which he calls "turnover". He then discusses the costs of turnover in a firm specific human capital model much as they were discussed here, but presents data on both gross movements and what he properly calls "job changes". He faults the latter set because it omits temporary layoffs. Hall clearly knows what his data are (722-3) but chooses to ignore the difference between the two concepts. Given his objective of comparing the two components of unemployment between demographic groups and between cities this is understandable, but the discussion of turnover costs seems out of place. If it were not for this discussion, the point being made would be purely semantic: I would prefer to say that Hall is studying gross movements and uses turnover data in part of his study to approximate them. But see footnote 1 on next page.

A recent and valuable Canadian study explicitly chooses an intermediate definition that corresponds roughly to that used in the official U.S. turnover data (see below): "Stated simply, 'turnover' is the movement of employees across the boundaries of organizations and/or labour market states". (Leckie, *et al.*, 1980, 3-4) Cf. p. 3 above. One might characterise this as defining turnover as crossing an establishment boundary whether permanently or temporarily, although some temporary crossings, such as unpaid but sanctioned absences, would not be recorded as a change of labour force status given the statistical conventions. Cf. the U.S. definition below. Unlike Hall's study, this one does focus on turnover proper; but it, in fact, deals entirely with quits for which, aside from measurement problems, the broader definition is equivalent to the narrower one.

of the labour market states and nonparticipation in the labour force. These may be substantial and can present serious problems in the analysis and measurement of unemployment (Hall, 1972; Clark and Summers, 1976; Postner, 1980), but they need not delay us here. The crucial difference from the point of view of turnover is that not all turnover is now registered as a gross flow and not all gross flows constitute turnover. Thus, many workers can and do search while employed and change employers without leaving that labour market state. It is also clear from the preceding discussion of firm specific human capital investment -- a concept that turns out to be nearly coincident with that of turnover costs -- that there is one flow from employment into unemployment, the placing of workers on temporary layoff that does not constitute turnover. Indeed such "inventoring" (Stiglitz, 1975, 14) of workers is designed precisely to prevent a permanent breach and thus avoid turnover costs.[1]

So much for the theoretical literature. There is also an empirical economic literature that relies on turnover. Some of this measures growth and decline of firms, industries and regions by comparing accession and separation rates. Some compares turnover rates of various demographic and other groups to judge the stability or volatility of employment, or the permanence of labour force attachment. Some assesses cyclical patterns or the nature and severity of unemployment by comparing the behaviour of voluntary and involuntary separations (usually quits and layoffs) or "temporary"

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[1] Hall would readily agree to this, but defend his view of turnover. (Hall and Lilien, 1979, 3-10)

components of separations and accessions (usually layoffs and rehires). Quite often, in these contexts, turnover data are used in conjunction with gross flow and other labour force data.[1]

[1] Recall the discussion of Hall (1972) above. See also Feldstein (1973, 1975, 1976, 1978). Some of this material is discussed further below in conjunction with and following the discussion of measurement.

Measurement and Data

Measures:

By far the most common measure of turnover is the crude (as distinguished from specific) turnover rate. This ratio of separations or accessions or, more rarely, the sum of the two to employment can be interpreted as a weighted average of group-specific turnover rates. Such measures give only one piece of information about the distribution that they summarize. They are particularly misleading if the distribution has no marked tendency or peakedness or most common value, say because it has several distinct peaks or because it is widely scattered (rectangular). Since the distribution of turnover rates is frequently believed to be bimodal (have two distinct peaks) because of the induction crisis phenomenon and the consequent division of the work force into an unstable group of newcomers who leave very soon and the hard core who have survived the crisis and remain for long periods -- perhaps until retirement, the measure is widely criticized on that basis.

At a deeper level, any single summary measure of a body of data reveals only a small fraction of the information contained by the data. One may need more. Thus, it is quite correct that the turnover ratio contains very little of the diagnostic information required for a remedial program of the sort described in the managerial literature. A given ratio does not tell one whether a firm is: 1) recruiting the "wrong" people so that they leave soon after being hired (although ratios of over 100% per month must mean something of the sort), 2) replacing a large cohort of retirees by people who, in their turn, will stay until retirement, or 3) replacing the unstable portion of its work force with more stable workers.

In principle, if one has enough information, the problem can be overcome by calculating turnover rates that are specific to groupings by length of service, age, sex, skill, or any other principle of classification that one believes relevant. Fine groupings can then be collapsed into larger homogeneous groupings if no significant differences exist between them with respect to turnover behaviour. Once they have been compiled, however, the rates provide only one piece of information about the group. They can and do signal changes over time or differences between organizations or groupings of them that may warrant further investigation. For that fuller investigation one must have additional measures or the complete information.

The turnover rate can be defined as the accession rate, the separation rate, the lower of the two, or more rarely, their sum.[1] Price (1976) who also discusses a variety of other measures recommends that turnover rates, more specifically separation rates, always be calculated because their wide use permits relatively easy comparison, but that they be accompanied by other measures. The complement that he recommends is the instability rate -- the ratio of the number of employees on the payroll at the beginning of a period who leave during that period -- say a month -- to the number of employees at the beginning of the month. This measure, unlike

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[1] Perhaps the best known set of such data -- the U.S. Bureau of Labor Statistics (BLS) set of "Labor Turnover Rates" does not define turnover at all, but simply gives information on total accessions, total separations and the components of the two. The Dominion Bureau of Statistics (72-006) (now Statistics Canada) used to define the rate of labour turnover as the lower of the hiring or separation rate. Both these agencies calculated rates monthly and interpreted the relevant organization as an establishment. These series are discussed below.

turnover, has a unique meaning[1] and a fixed range of 0 to 100 per cent.

Clearly, one would not wish to be dogmatic in this matter. For some purposes, measures of the average length of service of leavers or stayers, or survival or wastage rates may be precisely what one wants,[2] although Price does not recommend them for general use.

Data on turnover:

United States

As already mentioned, the major source of U.S. labour turnover data is the BLS monthly report based upon establishment data. This report gives accession and separation rates per hundred employees for some three and four digit industries in manufacturing, mining and telephone communications. Data are also published for selected States and areas, but not for age, sex, occupational, or other groupings.

Accessions are broken down into new hires, recalls and others, and

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[1] I.e. an instability rate of 50 p.c. must mean that half of those employed at the beginning of the month have left. A separation rate of 50 p.c. might also mean that. At the other extreme, it might mean that all those employed at the beginning of the month are still in place (instability rate of zero) but that some unknown number of additional workers has been hired during the period and that a number of them equal to one half of those employed at the beginning of the month have left.

[2] A recent Canadian study (Price, W., 1976, 1978) uses survival rates by years of service of those serving in each of the calendar years 1970 to 1973 to measure the Canadian Armed Forces' ability to retain Anglophone and Francophone officers, respectively. A firm that has recently tried to improve its recruiting procedures might well wish to calculate the wastage or survival rates for cohorts of new employees starting in sample months before and after the change.

separations into quits, layoffs, and discharges and others.

Before moving to the critical literature on U.S. turnover rates, it might be useful to interpret these concepts in terms of our earlier discussion:

1. In terms of the distinction made earlier, the B.L.S. "Labor turnover rates", in principle, exaggerate turnover since temporary layoffs of more than a week's duration[1] are explicitly included in the "layoff" category and recalls from these in "recalls". It is unfortunately not possible to obtain a "permanent" separation rate by subtracting layoffs from total separations because the layoff category includes essentially all "no fault" separations initiated by the employer. In B.L.S. terminology:

> "A layoff is a suspension from pay status (lasting or expected to last more than 7 consecutive calendar days without pay) initiated by the employer *without prejudice to the worker* for such reasons as: lack of orders, model changeover, termination of seasonal or temporary employment, inventory-taking, introduction of labor saving devices, plant breakdown, shortage of materials, etc.; *include temporarily furloughed employees and employees placed on unpaid vacations.*"

(Instructions for completing form DL 1219, Hall and Lilien, 1979, 12, 13, emphasis in original.)

In addition to temporary layoffs there are "unexpected but permanent losses of jobs...and the expected termination of temporary jobs." (Hall and Lilien, 1979, 14)

One might be able to get at "pure" turnover from the accession

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[1] Layoffs of a week or less are deliberately omitted. B.L.S., *Employment and Earnings*, and Hall and Lilien (1979, 11)

side by subtracting recalls from total accessions, since recalls are defined as:

> "...permanent or temporary additions to the employment roll of persons specifically recalled to a job in the same establishment of the company following a period of layoff lasting more than seven consecutive days. Employees called from a layoff in a different establishment of the company are to be classified as a transfer and reported in column 12 -- OTHER ACCESSIONS."

I know of no American work based upon this measure, possibly because data on recalls have only been collected since 1976.[1]

2. To comment briefly on other components of turnover:

a) "New hires" may include former employees, so long as they were not specifically "called back".

b) "Other accession" includes transfers from other establishments of the company (the establishment, not the firm constitutes the organization boundary) and employees returning from military leave or other absence without pay.

c) "Quits" are terminations initiated by the employee except for retirements, transfers, or army service. Persons who were hired but did not report or were absent without authorization for more than 7 calendar days at the month's end are included.

d) "Other separations" include discharges for cause, military duty of 30 days or more, retirement, death, permanent disability, transfers, etc. (Hall and Lilien, 1979, 11-14)

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[1] Feldstein's work, for example, is all based on earlier data. But Feldstein did use a somewhat cruder "rehire" figure obtained residually and including transfers. See e.g. Feldstein (1975, footnote 12.)

3. One should be clear as to what the definitions are, but also that the several categories are, at best, indicators of analytical concepts that one might desire. For instance, quits include persons absent without authorization at the end of the month. Such persons may turn out to have been accident victims in which case one assumes that they would be reinstated if recovered, or they would have been listed under "other separations" if they were known to be dead or permanently disabled. More seriously, quits are often interpreted as voluntary separations. Yet a thoughtful employer may well give someone an opportunity to resign instead of discharging him or give him notice that his job was coming to an end so that he may find another and quit instead of being laid off. (Stiglitz, 1975) Similar considerations apply to other categories. For instance, the omission of layoffs of seven days or fewer is intended, rightly or wrongly, to avoid contaminating that category with "short week" work sharing. (Hall and Lilien, 1979, 8, 11) Clearly, any comprehensive statistical record must reflect the form, not the substance, of what happens. The best that one may hope for is that the form normally reflects the substance.

That aside, B.L.S. turnover data have been the subject of repeated specific criticism on several grounds and alternative measures have been suggested and advocated. (Miner, 1977; Hall and Lilien, 1979; Cohen and Schwartz, 1980) Among the data's more obvious defects are:

1) Incomplete industry coverage: As already mentioned, only manufacturing, mining, and one public utility industry are covered. The left out sectors have increased in employment relative to those included.

2) Incomplete coverage of industries sampled: participation by cooperating state agencies and firms is voluntary. Three states, including California, have withdrawn; although B.L.S. continues to collect and publish data for them it does so on a basis of a declining sample. A number of firms choose not to participate or participate on their own terms. Small firms are deliberately under-sampled. New firms are additionally under-represented. All these result or may result in an underestimation of turnover rates, especially new hires. In consequence, employment is underestimated.

3) As already reported, the data contain no demographic or occupational information and one-week or shorter layoffs are omitted.

It is suggested that better data could be obtained from alternative data from establishments or from the Current Population Survey.[1]

Canada

Establishment surveys:

Turnover data from an establishment survey were published by the Dominion Bureau of Statistics for January 1948 to August 1966. These were derived from a semiannual survey conducted by the Department of Manpower and Immigration and designed for its operational use. The data pertain to all employees (covered and uncovered) of establishments covered by the

[1] I understand that Hall is now, in fact, working with the latter set of data. The turnover data also have their defenders. See e.g. the comments by Armknecht and Brechling in Hall and Lilien (1979) though they concede the need for improvement.

Unemployment Insurance Act[1] -- roughly all those with 10 or more employees and all establishments of multiestablishment firms with any insured employees. In industrial coverage, the survey again corresponded to the Unemployment Insurance Act and so included all major industry groups except for government service. In August, 1966 nearly 77,000 establishments with over 4 million paid workers were included.

Hiring and separation rates (but not their components) were presented monthly by industry for men and women separately. For the five major regions[2] only total rates were published.

Unlike the American turnover rates, the Canadian excluded workers temporarily laid off[3] and casual employees hired for six days or fewer.

Since 1966 no regular establishment turnover data national in scope have been collected. For 1973 the Economic Council of Canada presents some turnover rates by industry group based upon a countrywide survey of 123 companies. These convey the impression that turnover rates vary widely between firms in a given industry and that "high turnover rates are an especially acute problem in two quite different situations. One is typified by the mining and pulp and paper industries, where much activity is in isolated areas.... The other is represented by activity centred in urban areas and in small shops and industries that rely heavily on women

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[1]Except for crews of vessels and stevedores.

[2]Atlantic, Quebec, Ontario, Prairies, B. C. These U.I.C. regions differ somewhat from the normal Statistics Canada regions made up of whole Provinces.

[3]Those "with definite instructions to return to work within 30 days". (72-006 [June, 1968] 6)

workers." (Economic Council of Canada, 1976, 89-94) These findings correspond well to those presented above for the mining and shoe industries.

One-shot surveys of establishments are also available for Nova Scotia manufacturing in 1974 (Nova Scotia, 1976) and for Ontario in 1973-1975. (Robertson and Humphreys, 1978) Like the Economic Council data, these are based upon relatively small and discouragingly self-selected samples. The Nova Scotia survey included 311 firms with 15 or more employees. It obtained only 87 usable responses. The Ontario study, of which more later, used a "stratified sample of establishments selected from Statistics Canada ES-1 list" (20 or more employees or establishments of a multiestablishment company). 1,600 establishments were selected and 1,116 or 70 p.c. returned questionnaires. 158 of these were unusable and only 230 or 15 p.c. contained data on turnover (Robertson and Humphreys, 1978; Leckie, *et al.*, 1980). Clearly, in the absence of a regular establishment survey even cooperative firms are unlikely to be willing or able to supply data on turnover.

Household surveys:

While household data are not directly comparable to establishment data, they may be a more promising source of turnover information in Canada and are clearly a more useful source of information on worker characteristics. They, of course, contain no information on the employing organization other than its industrial classification.

Published data:

Statistics Canada (71-001) publishes a great deal of information based upon its monthly Revised Labour Force Survey. This is based

upon a very comprehensive and well researched and well established sample and survey procedure. Revision took place in 1975 and breaks the continuity of the data at that year although a rescaling of some of the older data is possible. Since 1975 a wealth of additional information has become available.[1]

While the Labour Force Survey does not measure turnover as such, it does provide much relevant information.[2] There is, for instance, much information on job search not only by the unemployed but also by the employed and those not in the labour force. Both the unemployed and those not in the labour force are classified by reasons for leaving their last job if they have worked in the last five years. The categories include a variety of personal reasons -- illness, personal responsibility, [return to] school, and retired -- layoffs and job losses, and other, including quits.[3] Information is given for the population as a whole and also classified by sex, major age group (15-24 and 25 and over), and married or other, and for both Canada and Provinces.[4]

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[1] On the sample see Statistics Canada (71-526). On data collection and transmission and interpretation of Labour Force Survey documents and concepts see Statistics Canada (71-528); for back data on the 'revised' basis see Statistics Canada (71-201); on details of the 1975 revisions and their consequences see Statistics Canada, Labour Force Division, *Research Papers*, Nos. 1-6 (various authors and dates).

[2] Two major deficiencies of these data are: first, that they contain no information on income or earnings and, second that, like all household data, they lack the relevant information on establishment or firm characteristics.

[3] Information on quits "for no specific reason" and because "dissatisifed with job" is, in fact, collected separately and tabulated monthly. Requests for it thus "do not require additional programming and can therefore be serviced quickly". (Statistics Canada 71-528, 59, 65)

[4] For the Atlantic and Prairie provinces age-sex-marital breakdowns are not published.

For the unemployed who are looking for work, information is also available on "activity [immediately] prior to looking for work" that reports several labour force and non-labour force activities once again by sex, major age group and marital status for Canada and Provinces.[1] Finally, there is also information on "flows into unemployment"[2] by sex for Canada and Provinces and by sex and marital status (single, married, and other) and by education for Canada.[3] This table separates the unemployed into job losers, job leavers, entrants and reentrants (2 categories).

For the employed, there is information on job tenure by major industry group and sex and major occupational group and sex.[4] The breakdown of length of tenure is quite fine for lengths of less than one year,[5] and thereafter 5 year intervals up to 20 years or more are given.

Very likely, there is additional published information from the Survey, that will strike particular turnover researchers as useful. The preceding exhausts the published data that occur to me in the context but it is far from exhausting the possibilities of household data.

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[1] Finer breakdowns are again tabulated monthly.

[2] See Statistics Canada (71-001) May 1978, for additional discussion of this data set.

[3] Finer breakdowns are again tabulated monthly.

[4] Finer breakdowns are again tabulated monthly.

[5] 1-3 months, 4-6 months, 7-12 months.

Unpublished data:

1. Monthly Labour Force Survey Microdata. The monthly Labour Force Survey microdata tapes are now readily available from Statistics Canada. These contain a very large amount of demographic, geographic, occupational, etc., information on all individuals in the sample. Their major deficiency is the absence of wages, earnings,[1] and, of course, organization information such as working conditions or unionization. Clearly these data could be used in conjunction with such variables as those already described for a very full investigation of characteristics of quitters, job losers, stayers by length of tenure, etc.

2. Annual Work Pattern Survey Microdata. Each January those included in the Labour Force Survey are asked to recall their Labour Force exnerience for the previous year. The surveys covering the years 1978-1980 are comparable and microdata tapes of them are (or soon will be) available. These tapes can also, on request, include a selection of demographic, occupational, etc., characteristics from the Labour Force Survey of the following January.

The results are used to compile a record of activity in or out of the labour force for each of the 24 half-monthly periods into which the year is divided, also recorded on the tape. Thus, in principle,[2] one obtains a 12 month sequence of changes in activity. Respondents who report a week or more of unemployment in any month are also asked whether they changed employers. Thus, one has a complete year's record of any job

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[1] But some information on earnings and other income is available from the microdata tapes of the annual Statistics Canada Survey of Consumer Finances, also based upon the Labour Force sample.

[2] There is, necessarily, a degree of arbitrariness in the coding and classification conventions.

changes involving a week or more unemployment. This provides a quite unusual opportunity to identify the characteristics of "job hoppers" that change employers many times during a year on the one hand and "stable workers" that remain with a single employer for at least a year on the other. The Annual Work Patterns microdata do not have as rich a set of either labour force or personal information as the Monthly Survey, but they do have the very valuable additional dimension of behaviour over a period of time.

3. Gross Flow Data. These data, which only recently became available, show monthly movements in both directions between the three categories of employment, unemployment, and not in the labour force. Data are now available from 1977 on for Canada, Quebec, Ontario, and B. C. They are subdivided by sex and major age category. The data are obtained by matching records from two successive Monthly Surveys and are still somewhat experimental in nature.[1] Their relation to turnover has already been discussed at some length.

No systematic search has been made of data that might be available from other government or private agencies. The discussion above might make one wonder, however, why authors of recent Canadian studies of turnover so frequently express regret that the establishment survey has been discontinued and make heroic attempts to collect establishment data, yet do so little to exploit the very rich sets of Labour Force Survey and related data that are available.

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[1] For further discussion see Smith and Vanski (1978), especially the comments by R. Veevers and I. Macredie 45-56, and Statistics Canada (1979). For an early use of the new Canadian gross flow data see Postner (1980).

Empirical Studies:

A number of empirical studies have already been discussed in passing. Price (1977) in his codification found strong support for only three "correlates" of turnover: length of service and/or age which have a negative impact on turnover and the general level of employment which has a positive one. The Canadian studies that we have examined confirm these findings.

Price reports medium support for the proposition that unskilled and blue-collar workers have higher turnover and that there are inter-country differences, with Canada toward the upper end among OECD countries. The mining and shoe industry studies seem to support the proposition regarding skill. The data that have been discussed are compatible with propositions about intercountry differences but not comparable enough to support or reject it.

Finally, Price reports that turnover of the better educated, managers, government workers, and women has sometimes been found higher and sometimes lower than the average. The Economic Council of Canada suggests that, in this country, women have higher turnover rates, and Robertson and Humphrey (1978, 33) confirm this.

In what follows we summarize perhaps the most ambitious recent attempt to survey establishments for information regarding turnover -- the 1978 Ontario study (Robertson and Humphreys, 1978; Robertson, 1979) and an empirical study based upon it (Leckie, *et al.*, 1980).

As already reported, Robertson and Humphreys surveyed 1,600 larger Ontario establishments and obtained 1,116 replies of which only a

small fraction were able to supply usable turnover data. Although 37 p.c. of their respondents reported that they experienced turnover problems and 27 p.c. that they have made efforts to identify these, many fewer (20 p.c.) provided turnover data and only 5 p.c. had attempted to estimate the cost of turnover.

Dissatisfaction with working conditions was most often identified as a cause of turnover (39 p.c.)with poor work ethic (22 p.c.) a distant second. Only 5 p.c. identified poor hiring and selection.

Robertson and Humphreys calculate turnover rates, on several classifications, but since their sample or at least that drawn from it by Leckie, *et al.*, is very unrepresentative of the size, degree of unionization, and industrial structure of both Ontario and Canadian establishments (Leckie, *et al.*, 1980, 22) one does not quite know to what universe these results apply or how one might compare them to others.

Leckie, *et al.* (1978) use the Ontario sample in combination with other data to estimate some of the "correlates" of turnover or, more accurately, of quit rates.[1] Their sample is further reduced to 123 establishments because of their data requirements.

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[1] They argue that: "first, most separations are voluntary; and, second, quits are more subject to control by organizations than are other types of separations." (1978, 4 emphasis in original.) The first proposition is far from obvious from recent Canadian experience. From the "Flows into Unemployment" data for 1975-80, for example, the number of job losers systematically exceeds that of job leavers for all years and categories shown. Very often it is more than twice as large. Among those out of the labour force, those that lost their jobs are admittedly the minority. (Statistics Canada 71-001, December 1978 and 1980; 71-529). Despite the name of one of them, neither of these sets of data in fact measures flows. They rather partition the stock of the unemployed and those not in the labour force according to how they got there. To get true flows one needs the average completed duration in the state for relevent categories. There are a number of ways of calculating this. See Kaliski (1979) for references.

The second proposition I find frankly baffling, although I can quite see why organizations might find quits more worrying than involuntary separation which, subject to contractual and legal limits, are under their absolute control.

Leckie, *et al.*, match the sample with industry-wide data on pay and pay increases and usual hours of work, and regional data on labour market tightness, they also obtain information on the firm's age, its profitability, and whether the majority of workers in it are unionized. They regress quit rates on these variables and the size of the establishment. They find that pay, increases in it, and hours significantly affect quit rates, as do labour market tighteness, age of firm, and its profitability. Firm size and the degree of unionization do not appear to be significant.

While the nature of Leckie, *et al.'s* sample is such as to cast doubt on the generalizability of their results their imaginative effort at matching a special establishment survey with more general aggregate variables is worthy of emulation. This is precisely how the household survey data that we have suggested earlier might be utilized when one proceeds from measurement to statistical analysis.

SUMMARY AND CONCLUSIONS

Several rather separate bodies of turnover literature were examined. They were found, in general, to be complementary rather than competitive. This is in accordance with the views of other writers such as Price (1977) and Leckie, *et al.* (1980).

The examination of measures of turnover suggested that crude rates or their components had a general appeal, in part, at least, because they have been so widely used already. But much more detailed information is likely to be needed for detailed diagnoses, and researchers with particular problems in mind might well prefer other measures.

It was found that there is in Canada no systematic collection of turnover data as such. An establishment survey did exist until mid-1966 and one could, of course, argue for its revival. It is far from clear, however, that, at least from a research point of view, that is the most promising approach. The severe dissatisfaction with a fairly similar American survey and the disappointing experience of Canadian researchers in trying to collect their own establishment data both suggest that such a survey might have difficulty in attracting continuing support and that it may encounter significant data collection problems, at least at first and on a uniform and comprehensive basis.

Indeed, the best argument for such a survey might be based upon its indirect effects: By inducing firms to collect turnover statistics on a regular basis it may make them better informed about their turnover problems and better able to cope with them. It may also provide a base for

other researchers seeking to study particular situations in greater detail. In the meanwhile researchers embarking upon their own collection of organization turnover data, had better be prepared for meagre response, unless perhaps they are working in cooperation with an enterprise or industry already convinced that it has turnover problems and committed to studying and correcting them.

Whatever one might ultimately decide with respect to an establishment survey, it seems clear that a potentially very rich and hardly utilized source of information about turnover is available from the Statistics Canada Revised Labour Force Survey and related data. These data may well turn out to require some change in either presentation or collection to be of maximal use to turnover researchers, but that can only be established if and when they begin to be used far more intensively. Imaginative use of these data, in combination with other sources of information will undoubtedly call for patience, laborious matching, and a willingness to compromise. But it seems the best option, at least for the present.

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